

CLAIMS

What is claimed is.

1 1. An article comprising:
2 a mounting substrate;
3 a passive component site on the mounting substrate;
4 an active component site on the mounting substrate; and
5 a fluid flow barrier disposed local to the passive component site and
6 spaced apart from the active component site.

1 2. The article of claim 1, the mounting substrate including a first side
2 and a second side, wherein the passive component site and the active component site
3 are disposed in a solder mask on the first side, and wherein the fluid flow barrier is
4 integral with the solder mask.

1 3. The article of claim 1, wherein the fluid flow barrier includes a
2 sidewall and a floor, wherein the floor includes an electrically conductive material.

1 4. The article of claim 1, the mounting substrate including a first side
2 and a second side, wherein the passive component site and the active component site
3 are disposed in a solder mask on the first side, wherein the fluid flow barrier is a
4 trench in the solder mask, and wherein the trench describes a perimeter around the
5 passive component site.

1 5. The article of claim 1, the mounting substrate including a first side
2 and a second side, wherein the passive component site and the active component site
3 are disposed in a solder mask on the first side, wherein the fluid flow barrier is a
4 trench in the solder mask, wherein the trench describes a perimeter around the
5 passive component site, wherein the perimeter includes a trench side that is adjacent
6 and spaced apart from the active component site, and wherein the trench side that is

7 adjacent and spaced apart from the active component site includes a non-linear
8 boundary.

1 6. The article of claim 1, the mounting substrate including a first side
2 and a second side, wherein the passive component site and the active component site
3 are disposed in a solder mask on the first side, wherein the fluid flow barrier is a
4 trench in the solder mask, wherein the trench describes a perimeter around the
5 passive component site, wherein the perimeter includes a trench side that is adjacent
6 and spaced apart from the active component site, wherein the trench side that is
7 adjacent and spaced apart from the active component site includes a non-linear
8 boundary, and wherein the non-linear boundary is selected from curvilinear,
9 rectilinear, and combinations thereof.

1 7. The article of claim 1, wherein the passive component site is spaced
2 apart a distance from the active component site in a range from about 5 mm to about
3 1 mm.

1 8. The article of claim 1, wherein the passive component site is spaced
2 apart a distance from the active component site by about 1.7 mm.

1 9. The article of claim 1, further including at least one fluid flow barrier
2 that is disposed general to the active component site.

1 10. The article of claim 1, wherein the at least one fluid flow barrier
2 includes a trench with a dielectric floor.

1 11. A packaging system comprising:
2 a mounting substrate;
3 a first passive component site on the mounting substrate;
4 a first active component site on the mounting substrate;

5 a fluid flow barrier disposed local to the passive component site and
6 spaced apart from the active component site;
7 a first active component disposed at the first active component site;
8 a first passive component disposed at the passive component site; and
9 an encapsulation material disposed contiguous the active component
10 and extending away therefrom.

1 12. The packaging system of claim 11, wherein the first active
2 component is selected from a processor, a data storage device, a digital signal
3 processor, a micro controller, an application specific integrated circuit, and a
4 microprocessor.

1 13. The packaging system of claim 11, wherein the first passive
2 component is one of a plurality of passive components, and wherein each of the
3 plurality of passive components is disposed spaced apart from the first active
4 component in a distance range from about 1 mm to about 5 mm.

1 14. The packaging system of claim 11, further including at least one of
2 an input device and an output device.

1 15. The packaging system of claim 11, further including at least one of
2 an input device and an output device, and wherein the computing system is disposed
3 in one of a computer, a wireless communicator, a hand-held device, an automobile,
4 a locomotive, an aircraft, a watercraft, and a spacecraft.

1 16. The packaging system of claim 11, wherein the encapsulation
2 material terminates in a convex meniscus profile at the fluid flow barrier.

1 17. The packaging system of claim 11, wherein the fluid flow barrier
2 includes a sidewall and a floor, wherein the floor includes an electrically conductive
3 material.

1 18. The packaging system of claim 11, the mounting substrate including
2 first side and a second side, wherein the passive component site and the active
3 component site are disposed in a solder mask on the first side, wherein the fluid
4 flow barrier is a trench in the solder mask, and wherein the trench describes a
5 perimeter around the passive component site.

1 19. The packaging system of claim 11, the mounting substrate including
2 first side and a second side, wherein the passive component site and the active
3 component site are disposed in a solder mask on the first side, wherein the fluid
4 flow barrier is a trench in the solder mask, wherein the trench describes a perimeter
5 around the passive component site, wherein the perimeter includes a trench side that
6 is adjacent and spaced apart from the active component site, and wherein the trench
7 side that is adjacent and spaced apart from the active component site includes a non-
8 linear boundary.

1 20. The packaging system of claim 11, the mounting substrate including
2 first side and a second side, wherein the passive component site and the active
3 component site are disposed in a solder mask on the first side, wherein the fluid
4 flow barrier is a trench in the solder mask, wherein the trench describes a perimeter
5 around the passive component site, wherein the perimeter includes a trench side that
6 is adjacent and spaced apart from the active component site, wherein the trench side
7 that is adjacent and spaced apart from the active component site includes a non-
8 linear boundary, and wherein the non-linear boundary is selected from curvilinear,
9 rectilinear, and combinations thereof.

- 1 21. A method comprising:
2 forming an active component site and a passive component site in a
3 substrate, wherein the active component site and the passive component site
4 are spaced apart; and
5 forming a fluid flow barrier local to the passive component site and
6 spaced apart from the active component site.
- 1 22. The method of claim 21, further including:
2 installing an active component at the active component site;
3 installing a passive component at the passive component site; and
4 forming an encapsulation structure contiguous the active component
5 and extending away therefrom.
- 1 23. The method of claim 21, wherein forming an encapsulation structure
2 includes flowing encapsulation material under conditions that cause the
3 encapsulation material to terminate at the fluid flow barrier.
- 1 24. The method of claim 21, wherein forming an encapsulation structure
2 includes flowing encapsulation material under conditions that cause the
3 encapsulation material to terminate in a convex meniscus profile at the fluid flow
4 barrier.
- 1 25. The method of claim 21, wherein forming a fluid flow barrier local to
2 the passive component site includes forming the fluid flow barrier perimeter to
3 divert flow of the encapsulation material.
- 1 26. The method of claim 21, wherein forming an encapsulation structure
2 includes flowing encapsulation material under conditions that cause the
3 encapsulation material to terminate in a convex meniscus profile at the fluid flow
4 barrier, and wherein forming a fluid flow barrier local to the passive component site

5 includes forming the fluid flow barrier perimeter to divert flow of the encapsulation
6 material.

1 27. The method of claim 21, wherein the passive component site and the
2 active component site are disposed in a solder mask on the first side, wherein the
3 fluid flow barrier is a trench in the solder mask, wherein the trench describes a
4 perimeter around the passive component site, wherein the perimeter includes a
5 trench side that is adjacent and spaced apart from the active component site, wherein
6 the trench side that is adjacent and spaced apart from the active component site
7 includes a boundary and wherein forming an encapsulation structure includes
8 flowing encapsulation material under conditions that cause the encapsulation
9 material to terminate at the fluid flow barrier.

1 28. The method of claim 21, wherein the passive component site and the
2 active component site are disposed in a solder mask on the first side, wherein the
3 fluid flow barrier is a trench in the solder mask, wherein the trench describes a
4 perimeter around the passive component site, wherein the perimeter includes a
5 trench side that is adjacent and spaced apart from the active component site, wherein
6 the trench side that is adjacent and spaced apart from the active component site
7 includes a non-linear boundary, and wherein the non-linear boundary is selected
8 from curvilinear, rectilinear, and combinations thereof, and wherein forming an
9 encapsulation structure includes flowing encapsulation material under conditions
10 that cause the encapsulation material to terminate at the fluid flow barrier, and
11 wherein forming a fluid flow barrier local to the passive component site includes
12 forming the fluid flow barrier perimeter to divert flow of the encapsulation material.